

Asparagus, Broccoli and Cauliflower in Minnesota: A Survey of Farms, Acreage and Marketing

by
James A. Skurla and George N. Edes

May 1986

General Report
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University of Minnesota, Duluth 55811

Asparagus, Broccoli and Cauliflower in Minnesota: A Survey of Farms, Acreage and Marketing

ACKNOWLEDGEMENTS

A note of thanks to all the Minnesota County Extension Agents. Your cooperation and assistance was crucial to the success of this survey, and likewise for any future such surveys. We hope you find this and future reports useful in your efforts to help Minnesota's farmers and other small businessmen.

PREFACE

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James A. Skurla and George N. Edes

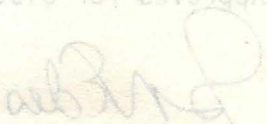
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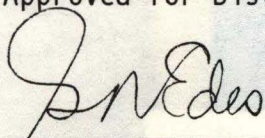


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TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iii
------------------	-----

PREFACE	iv
---------	----

ACKNOWLEDGEMENTS

INTRODUCTION	v
--------------	---

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RESPONSES RECEIVED AND SUMMARIZED	6
Asparagus	6
Broccoli	6
Cauliflower	6

MARKETING / PROCESSING	10
------------------------	----

CONCLUDING REMARKS	10
--------------------	----

PREFACE

APPENDIX	11
----------	----

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1. MINNESOTA BROCCOLI AND CAULIFLOWER ACRES	3
2. MINNESOTA ASPARAGUS ACRES	3
3. MINNESOTA COUNTIES WITH ABC CROPS	5
4. COUNTY AGENT SURVEY	12

TABLES

1. ASPARAGUS PRODUCTION IN MINNESOTA	7
2. BROCCOLI PRODUCTION IN MINNESOTA	8
3. CAULIFLOWER PRODUCTION IN MINNESOTA	9

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS.....	iii
PREFACE.....	iii
INTRODUCTION.....	1
SOME RESULTS AND HIGHLIGHTS.....	2
GEOGRAPHIC DISPERSITY OF PRODUCTION.....	4
RESPONSES TABULATED AND SUMMARIZED.....	6
Asparagus.....	6
Broccoli.....	6
Cauliflower.....	6
MARKETING / PROCESSING.....	10
CONCLUDING REMARKS.....	10
APPENDIX.....	11
BIBLIOGRAPHY.....	13

FIGURES

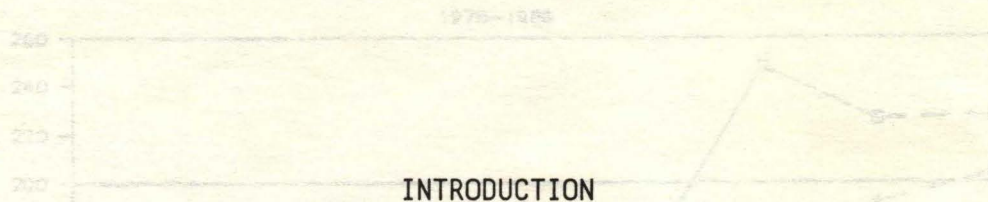
1. MINNESOTA BROCCOLI AND CAULIFLOWER ACRES.....	3
2. MINNESOTA ASPARAGUS ACRES.....	3
3. MINNESOTA COUNTIES WITH ABC CROPS.....	5
4. COUNTY AGENT SURVEY.....	12

TABLES

1. ASPARAGUS PRODUCTION IN MINNESOTA.....	7
2. BROCCOLI PRODUCTION IN MINNESOTA.....	8
3. CAULIFLOWER PRODUCTION IN MINNESOTA.....	9

FIGURE 1

MINNESOTA BROCCOLI & CAULIFLOWER ACRES



INTRODUCTION

In March 1986, a short survey of Minnesota County Extension Agents was conducted regarding commercial production and marketing of asparagus, broccoli, and cauliflower ("ABC") in Minnesota. NRRI's primary purposes for the survey were:

- to check on the quality of some federal Census of Agriculture data,
- to obtain data on more recent production (since the 1982 census), and
- to obtain data on the geographic extent of ABC farming in Minnesota.

The Minnesota County Agents provided estimates of farms and acreage in ABC production in their respective counties in 1984 and 1985, and corresponding plans for 1986.

This report is primarily a summary of the survey responses and some analyses thereof.

INTRODUCTION

SOME RESULTS AND HIGHLIGHTS

The statewide totals from the survey responses for broccoli and cauliflower appear to be reasonably consistent with the federal Census of Agriculture data for 1978 and 1982. These same federal reports refrained from showing the total asparagus acreage for Minnesota, ostensibly to avoid revealing data deemed confidential at the time.

The graphs on the following page show the Minnesota acreage for each recent year for which data have been acquired. While the 226 acres of broccoli in 1985 represented a six-fold increase from 33 acres in 1978, the cauliflower acreage barely more than doubled over the same seven year span. However, Minnesota's approximately 200 acres of each of these crops is insignificant in the national picture, being less than half of one per cent of the more than 50,000 acres of cauliflower and 80,000 acres of broccoli in the total U.S.

Minnesota's approximately 2,200 acres of asparagus, some ten times its broccoli or cauliflower acreage in 1984 and 1985, accounted for over 2% of the nation's 100,000 asparagus acres.

Reported plans for 1986 indicate nominal increases for broccoli (2%) and cauliflower (8%) acreages, and a huge 61% increase in Minnesota asparagus acres.

FIGURE 1

MINNESOTA BROCCOLI & CAULIFLOWER ACRES

1978-1986

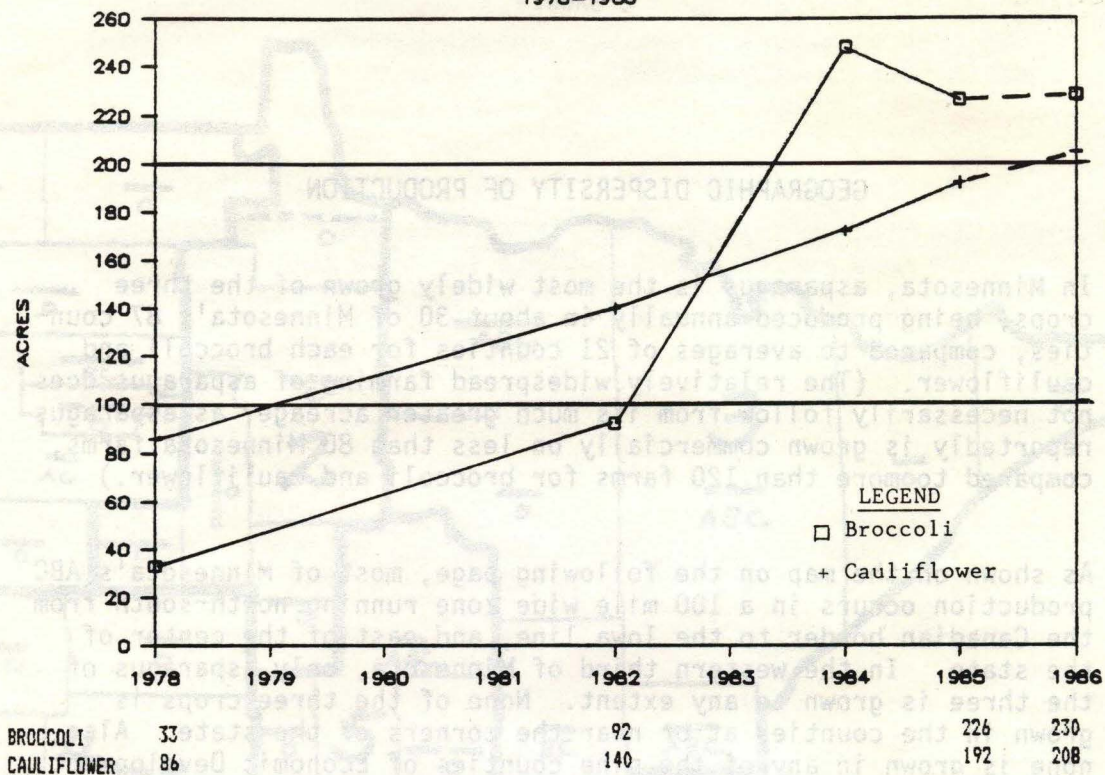
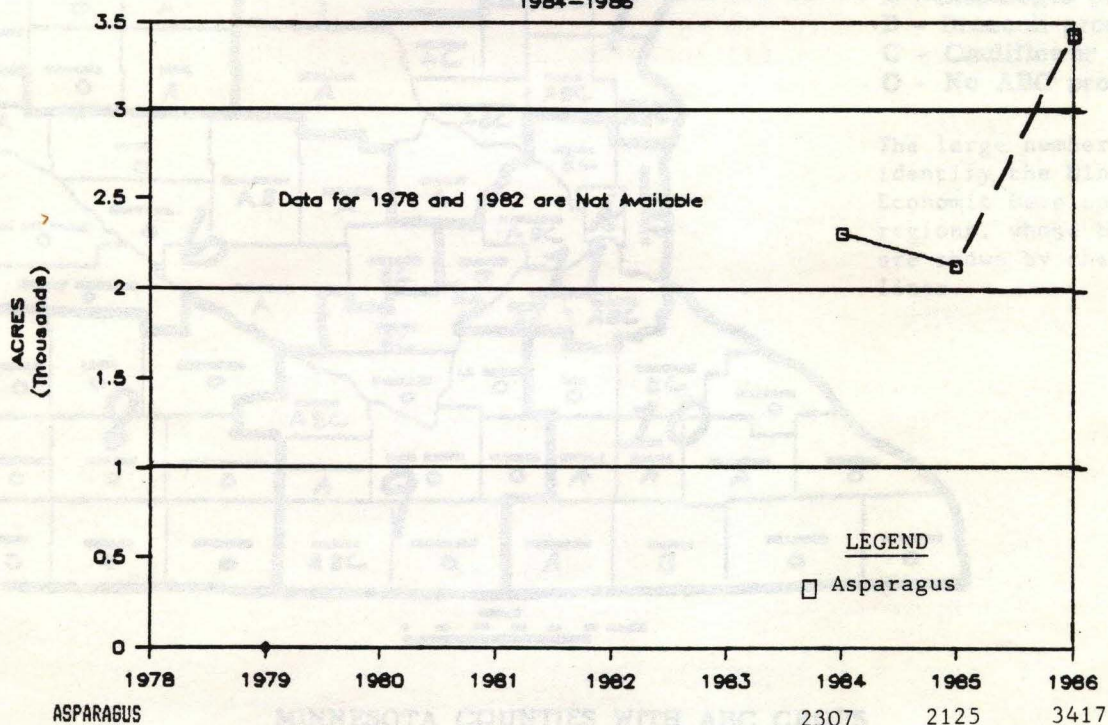


FIGURE 2

MINNESOTA ASPARAGUS ACRES

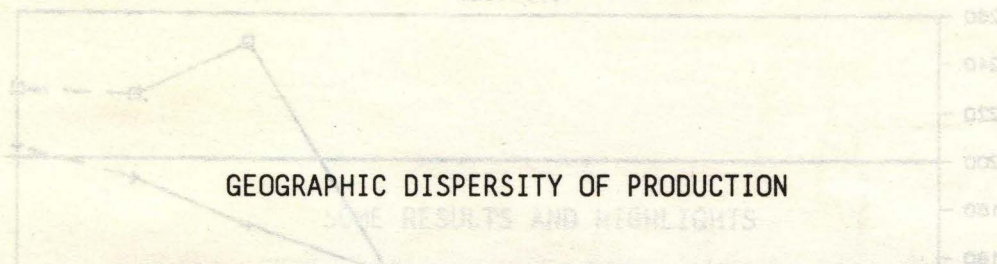
1984-1986



Sources: 1978 and 1982 data from the 1982 Census of Agriculture
 1984-86 Data from the 1986 County Agent Survey I

MINNESOTA BROCCOLI & CAULIFLOWER ACRES

1975-1986



GEOGRAPHIC DISPERSITY OF PRODUCTION

In Minnesota, asparagus is the most widely grown of the three crops, being produced annually in about 30 of Minnesota's 87 counties, compared to averages of 21 counties for each broccoli and cauliflower. (The relatively widespread farming of asparagus does not necessarily follow from its much greater acreage, as asparagus reportedly is grown commercially on less than 80 Minnesota farms, compared to more than 120 farms for broccoli and cauliflower.)

As shown on the map on the following page, most of Minnesota's ABC production occurs in a 100 mile wide zone running north-south from the Canadian border to the Iowa line, and east of the center of the state. In the western third of Minnesota, only asparagus of the three is grown to any extent. None of the three crops is grown in the counties at or near the corners of the state. Also, none is grown in any of the nine counties of Economic Development Region 8 in the southwestern corner, and very little is grown in Regions 1 and 2 in the northwestern corner of Minnesota. Rather, some 65% to 80% of the commercial acreage for each crop is within about eighty miles of the Twin Cities.

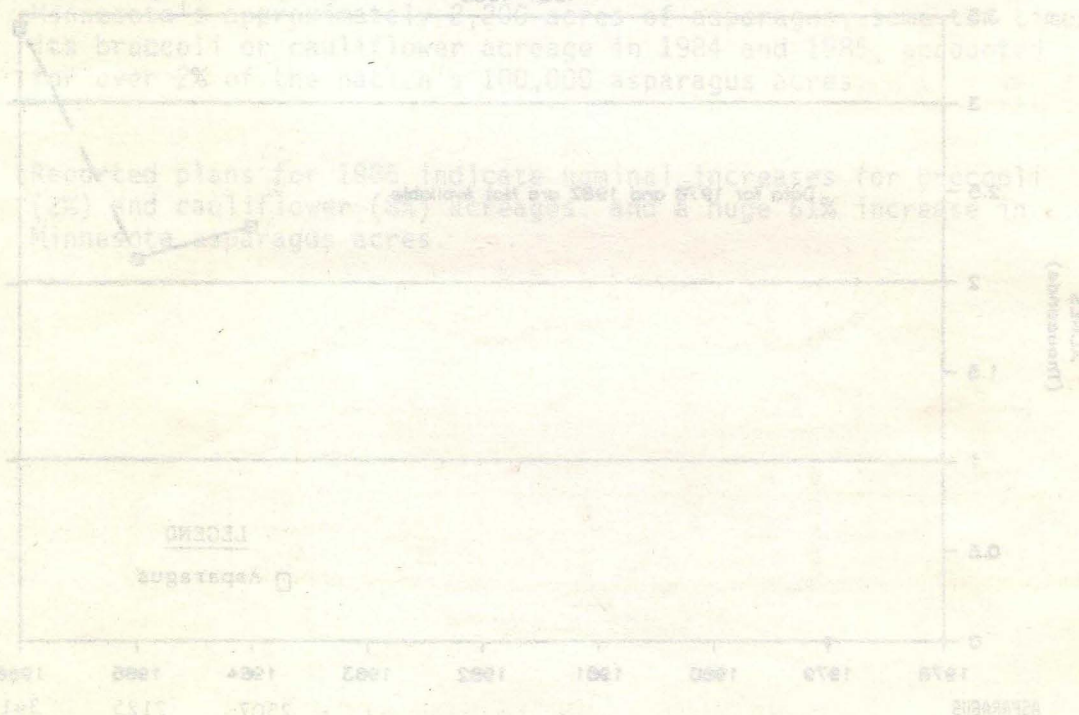
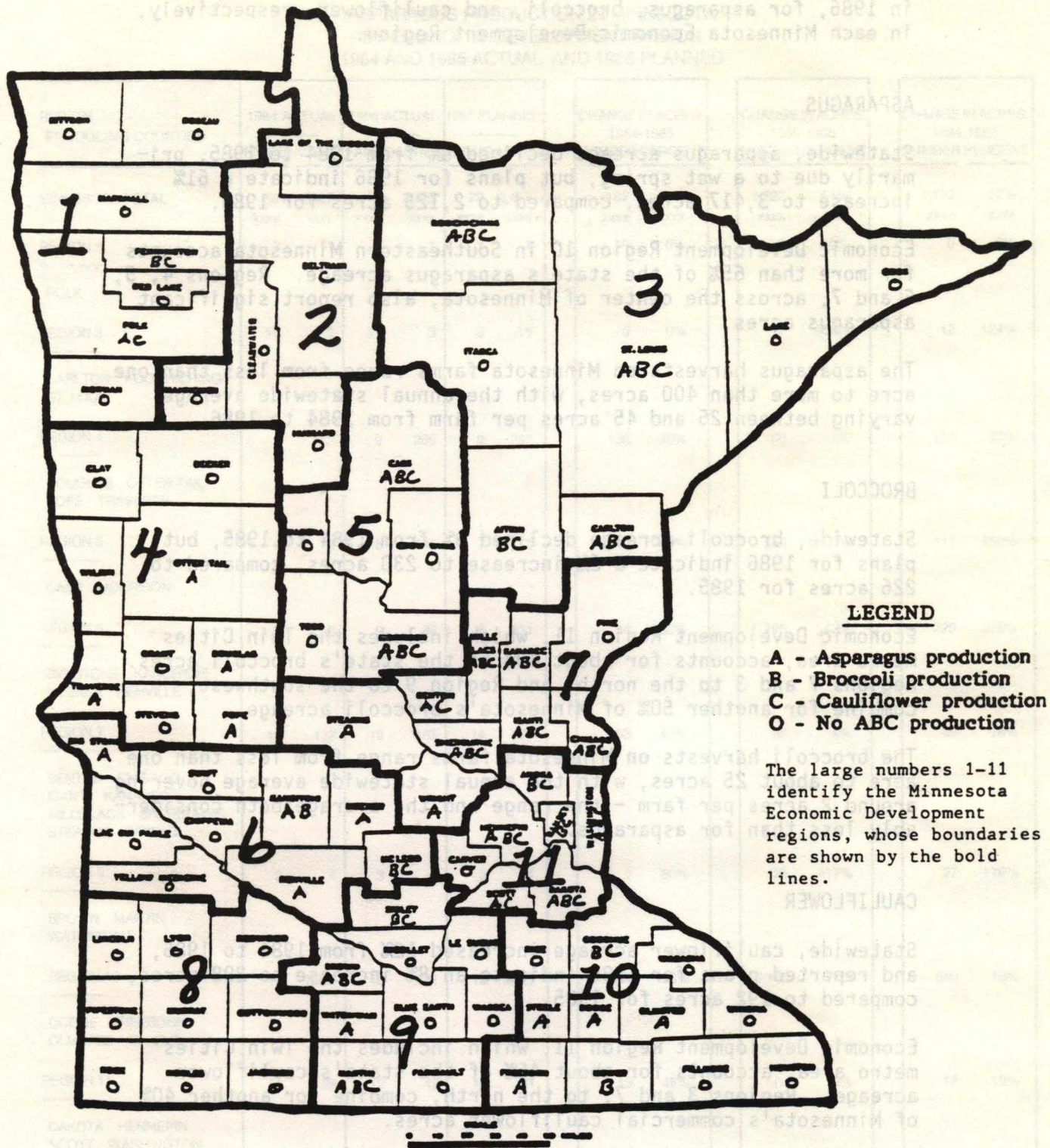


FIGURE 3



MINNESOTA COUNTIES WITH ABC CROPS

HARVESTED IN 1984 OR 1985, OR PLANNED FOR 1986

RESPONSES TABULATED AND SUMMARIZED

Tables 1, 2, and 3, on the following pages, show the farms and acres of actual production in 1984 and '85, and planned production in 1986, for asparagus, broccoli, and cauliflower, respectively, in each Minnesota Economic Development Region.

ASPARAGUS

Statewide, asparagus acreage declined 8% from 1984 to 1985, primarily due to a wet spring, but plans for 1986 indicate a 61% increase to 3,417 acres, compared to 2,125 acres for 1985.

Economic Development Region 10 in Southeastern Minnesota accounts for more than 65% of the state's asparagus acreage. Regions 4, 5, 6 and 7, across the center of Minnesota, also report significant asparagus acres.

The asparagus harvests on Minnesota farms range from less than one acre to more than 400 acres, with the annual statewide average varying between 25 and 45 acres per farm from 1984 to 1986.

BROCCOLI

Statewide, broccoli acreage declined 9% from 1984 to 1985, but plans for 1986 indicate a 2% increase to 230 acres, compared to 226 acres for 1985.

Economic Development Region 11, which includes the Twin Cities metro area, accounts for about 40% of the state's broccoli acres. Regions 7 and 3 to the north, and Region 9 to the southwest, combine for another 50% of Minnesota's broccoli acreage.

The broccoli harvests on Minnesota farms range from less than one acre to about 25 acres, with the annual statewide average hovering around 2 acres per farm - the range and the average both considerably less than for asparagus.

CAULIFLOWER

Statewide, cauliflower acreage increased 12% from 1984 to 1985, and reported plans for 1986 indicate an 8% increase to 208 acres, compared to 192 acres for 1985.

Economic Development Region 11, which includes the Twin Cities metro area, accounts for about 45% of the state's cauliflower acreage. Regions 3 and 7, to the north, combine for another 40% of Minnesota's commercial cauliflower acres.

Quite similar to broccoli, the cauliflower harvests on Minnesota farms range from less than one acre to about 20 acres, with the annual statewide average hovering just above 1.5 acres per farm.

TABLE 1

ASPARAGUS PRODUCTION IN MINNESOTA
BY ECONOMIC DEVELOPMENT REGION
1984 AND 1985 ACTUAL, AND 1986 PLANNED

REGION PRODUCING COUNTIES	1984 ACTUAL		1985 ACTUAL		1986 PLANNED		CHANGE IN ACRES: 1984-1985		CHANGE IN ACRES: 1985-1986		CHANGE IN ACRES: 1984-1986	
	FARMS ACRES		FARMS ACRES		FARMS ACRES		NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
MINNESOTA TOTAL	69	2,307	79	2,125	79	3,417	-182	-8%	1,292	61%	1,110	22%
	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
REGION 1	3	1	3	1	3	1	0	0%	0	0%	0	0%
POLK												
REGION 3	10	3	11	3	9	15	0	0%	12	400%	12	124%
CARLTON KOOCHICHING ST. LOUIS												
REGION 4	8	153	9	289	9	287	136	89%	(2)	-1%	134	37%
DOUGLAS OTTER TAIL POPE TRAVERSE												
REGION 5	4	2	5	142	7	113	140	7000%	(29)	-20%	111	652%
CASS MORRISON												
REGION 6	9	2	9	36	6	231	34	1700%	195	542%	229	975%
BIG STONE KANDIYOHI MEEKER RENVILLE												
REGION 7	19	132	19	185	14	177	53	40%	(8)	-4%	45	16%
BENTON CHISAGO ISANTI KANABEC MILLE LACS SHERBURNE STEARNS WRIGHT												
REGION 9	2	4	3	6	3	31	2	50%	25	417%	27	178%
BROWN MARTIN WATONWAN												
REGION 10	15	1,981	13	1,421	16	2,521	-560	-28%	1,100	77%	540	13%
DODGE FREEBORN OLMSTED STEELE												
REGION 11	11	29	12	42	12	41	13	45%	(1)	-2%	12	19%
DAKOTA HENNEPIN SCOTT WASHINGTON												

*Annualized Compound Rate

NOTE: No reported asparagus production in REGION 2 and REGION 8

RESPONSES TABULATED AND SUMMARIZED

TABLE 2

BROCCOLI PRODUCTION IN MINNESOTA
BY ECONOMIC DEVELOPMENT REGION
1984 AND 1985 ACTUAL, AND 1986 PLANNED

REGION PRODUCING COUNTIES	1984 ACTUAL		1985 ACTUAL		1986 ACTUAL		CHANGE IN ACRES: 1984-1985		CHANGE IN ACRES: 1985-1986		CHANGE IN ACRES: 1984-1986	
	FARMS	ACRES	FARMS	ACRES	FARMS	ACRES	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
MINNESOTA TOTAL	107 xxxx	248 xxxx	121 xxxx	226 xxxx	127 xxxx	230 xxxx	-22 xxxx	-9% xxxx	4 xxxx	2% xxxx	-18 xxxx	-4% xxxx
REGION 1	0	0	0	0	1	1	0	NA	1	NA	1	NA
PENNINGTON												
REGION 3	22	25	26	34	37	54	9	36%	20	59%	29	47%
AITKIN CARLTON KOOCHICHING ST. LOUIS												
REGION 5	5	69	4	16	5	11	-53	-77%	-5	-31%	-58	-60%
CASS MORRISON												
REGION 6	4	2	9	4	5	3	2	100%	-1	-25%	1	22%
KANDIYOHI MCLEOD												
REGION 7	32	68	30	47	25	33	-21	-31%	-14	-30%	-35	-30%
CHISAGO ISANTI KANABEC MILLE LAC SHERBURNE												
REGION 9	3	17	3	27	5	29	10	59%	2	7%	12	31%
BROWN MARTIN SIBLEY												
REGION 10	1	2	4	3	5	4	1	50%	1	33%	2	41%
GOODHUE MOWER												
REGION 11	40	65	45	95	44	95	30	46%	0	0%	30	21%
ANOKA DAKOTA HENNEPIN RAMSEY WASHINGTON												

*Annualized Compound Rate

NA - Not Available

NOTE: No reported broccoli production in REGION 2, REGION 4 and REGION 8

TABLE 3

**CAULIFLOWER PRODUCTION IN MINNESOTA
BY ECONOMIC DEVELOPMENT REGION
1984 AND 1985 ACTUAL, AND 1986 PLANNED**

REGION PRODUCING COUNTIES	1984 ACTUAL		1985 ACTUAL		1986 PLANNED		CHANGE IN ACRES: 1984-1985		CHANGE IN ACRES: 1985-1986		CHANGE IN ACRES: 1984-1986	
	FARMS	ACRES	FARMS	ACRES	FARMS	ACRES	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
MINNESOTA TOTAL	115	172	121	192	131	208	20	12%	16	8%	36	10%
	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
REGION 1	5	1	5	1	6	2	0	0%	1	100%	1	41%
PENNINGTON POLK												
REGION 2	1	2	1	2	1	2	0	0%	0	0%	0	0%
BELTRAMI												
REGION 3	25	30	28	42	39	60	12	40%	18	43%	30	41%
AITKIN CARLTON KOOCHICING ST. LOUIS												
REGION 5	4	13	4	7	4	11	-6	-46%	4	57%	-2	-8%
CASS MORRISON												
REGION 6	4	2	4	2	5	3	0	0%	1	50%	1	22%
MCLEOD												
REGION 7	36	57	30	37	24	18	-20	-35%	(19)	-51%	-39	-44%
BENTON CHISAGO ISANTI KANABEC MILLE LACS SHERBURNE												
REGION 9	2	2	2	2	4	12	0	0%	10	500%	10	145%
BROWN MARTIN SIBLEY												
REGION 10	0	0	3	1	4	2	1	NA	1	100%	2	NA
GOODHUE												
REGION 11	38	65	44	98	44	98	33	51%	0	0%	33	23%
ANOKA DAKOTA HENNEPIN RAMSEY SCOTT WASHINGTON												

*Annualized Compound Rate

NA - Not Available

NOTE: No reported cauliflower production in REGION 4 and REGION 8

MARKETING / PROCESSING

In 1985, over 80% of the Minnesota asparagus production was sold to processors, compared to only 46% of the total U.S. asparagus production.

On the other hand, virtually all the Minnesota broccoli and cauliflower production in 1985 was sold into the fresh produce market. For both products, the only Minnesota production processed was about one acre in Region 11, which was only one-half of one per cent of the Minnesota acreage. By comparison, in the total U.S., 33% of the broccoli and 25% of the cauliflower were processed.

CONCLUDING REMARKS

The short survey reported herein provided a quantitative snapshot of recent ABC commercial production and its marketing in Minnesota, and thereby achieved the purposes stated in the introduction.

However, as indicated in the preface, this survey is but a part of a larger purpose to help Minnesota farmers identify and quantify market opportunities. Accordingly, it is anticipated that further surveys will be conducted in the process of achieving this larger purpose.

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COUNTY AGENT SURVEY

INSTRUCTIONS

Please answer the following questions concerning COMMERCIAL asparagus, broccoli and cauliflower production in your county. DO NOT include home garden production in your estimates. If asparagus, broccoli or cauliflower are not grown in your county, just check the appropriate boxes marked NO and return the survey. If you do not know the exact answer to any question, please make your best estimate. Research Institute is grateful for your help. MARCH 31, 1985. NO POSTAGE IS REQUIRED. Please return to: Research Institute, 1000 University Ave., St. Paul, MN 55106.

1. IN WHICH COUNTY ARE YOU LOCATED? _____

2. IN YOUR COUNTY, WAS ANY ASPARAGUS, BROCCOLI OR CAULIFLOWER PLANTED OR HARVESTED DURING 1984, 1985 OR WILL ANY BE PLANTED IN 1985? _____

3. IF YES, PLEASE COMPLETE THE FOLLOWING TABLE

CROPS	1984		1985	
	NUMBER OF FARMS HARVESTED	ACRES	NUMBER OF FARMS HARVESTED	ACRES
A. Asparagus	_____	_____	_____	_____
B. Broccoli	_____	_____	_____	_____
C. Cauliflower	_____	_____	_____	_____

APPENDIX

4. FOR EACH CROP PLEASE INDICATE THE PERCENT SOLD IN THE FRESH MARKET AND PERCENT SOLD FOR PROCESSING IN 1984 AND 1985.

MARKET	1984		1985	
	ASPARAGUS	BROCCOLI	CAULIFLOWER	CAULIFLOWER
Percent Sold in Fresh Market	_____	_____	_____	_____
Percent Sold to Processors	_____	_____	_____	_____
TOTAL	100%	100%	100%	100%

5. If you have any additional information about the growing or marketing of asparagus, broccoli, cauliflower or other vegetables and specialty crops in your county or the State of Minnesota, please feel free to comment.

CONTACT PERSON _____ TITLE _____

ADDRESS _____ TELEPHONE _____

RETURN TO: NATURAL RESOURCES RESEARCH INSTITUTE, DMD, DULUTH, MN. 55812

FIGURE 4

COUNTY AGENT SURVEY

INSTRUCTIONS:

Please answer the following questions concerning COMMERCIAL asparagus, broccoli and cauliflower production in your county. DO NOT include home garden production in your estimates. If asparagus, broccoli or cauliflower are not grown in your county, just check the appropriate boxes marked NO and return the survey. If you do not know the exact answer to any question, please make your best estimate. Return the survey in the enclosed envelope by MARCH 21, 1986. NO POSTAGE IS REQUIRED. Thank you in advance for your help.

1. IN WHICH COUNTY ARE YOU LOCATED _____
2. IN YOUR COUNTY, WAS ANY ASPARAGUS, BROCCOLI OR CAULIFLOWER PLANTED OR HARVESTED DURING 1984, 1985 OR WILL ANY BE PLANTED IN 1986?

() NO () YES IF YES, PLEASE COMPLETE THE FOLLOWING TABLE.

CROPS	1984		1985		1986 ESTIMATED	
	NUMBER OF FARMS	ACRES HARVESTED	NUMBER OF FARMS	ACRES HARVESTED	NUMBER OF FARMS	ACRES PLANTED
A. Asparagus	_____	_____	_____	_____	_____	_____
B. Broccoli	_____	_____	_____	_____	_____	_____
C. Cauliflower	_____	_____	_____	_____	_____	_____

3. FOR EACH CROP PLEASE INDICATE THE PERCENT SOLD IN THE FRESH MARKET AND PERCENT SOLD FOR PROCESSING IN 1984 AND 1985.

MARKET	1984			1985		
	ASPARAGUS	BROCCOLI	CAULI- FLOWER	ASPARAGUS	BROCCOLI	CAULI- FLOWER
Percent Sold in Fresh Market	_____	_____	_____	_____	_____	_____
Percent Sold to Processors	_____	_____	_____	_____	_____	_____
TOTAL	100%	100%	100%	100%	100%	100%

4. If you have any additional information about the growing or marketing of asparagus, broccoli, cauliflower or other vegetables and specialty crops in your county or the State of Minnesota, please feel free to comment.

CONTACT PERSON _____ TITLE _____

ADDRESS _____ TELEPHONE _____

RETURN TO: NATURAL RESOURCES RESEARCH INSTITUTE, UMD, DULUTH, MN. 55812

BIBLIOGRAPHY

U.S. Bureau of the Census. 1982 Census of Agriculture.
Volume 1. Geographic Area Series. Part 23, Minnesota State
and County Data. Washington, D.C.: Government Printing
Office, 1984.

_____. 1982 Census of Agriculture.
Volume 1. Geographic Area Series. Part 51. United States
States Summary and State Data. Washington, D.C.:
Government Printing Office, 1984.

United States Department of Agriculture. Crop Report Board.
Statistical Reporting Service. Vegetables.
Washington, D.C.: Government Printing Office, December 1985.

